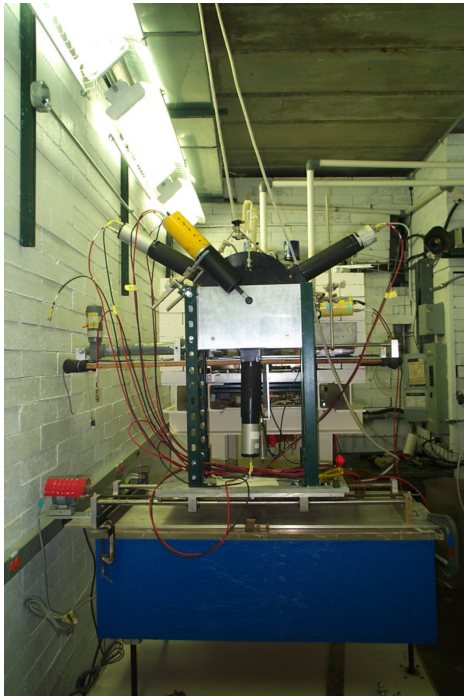
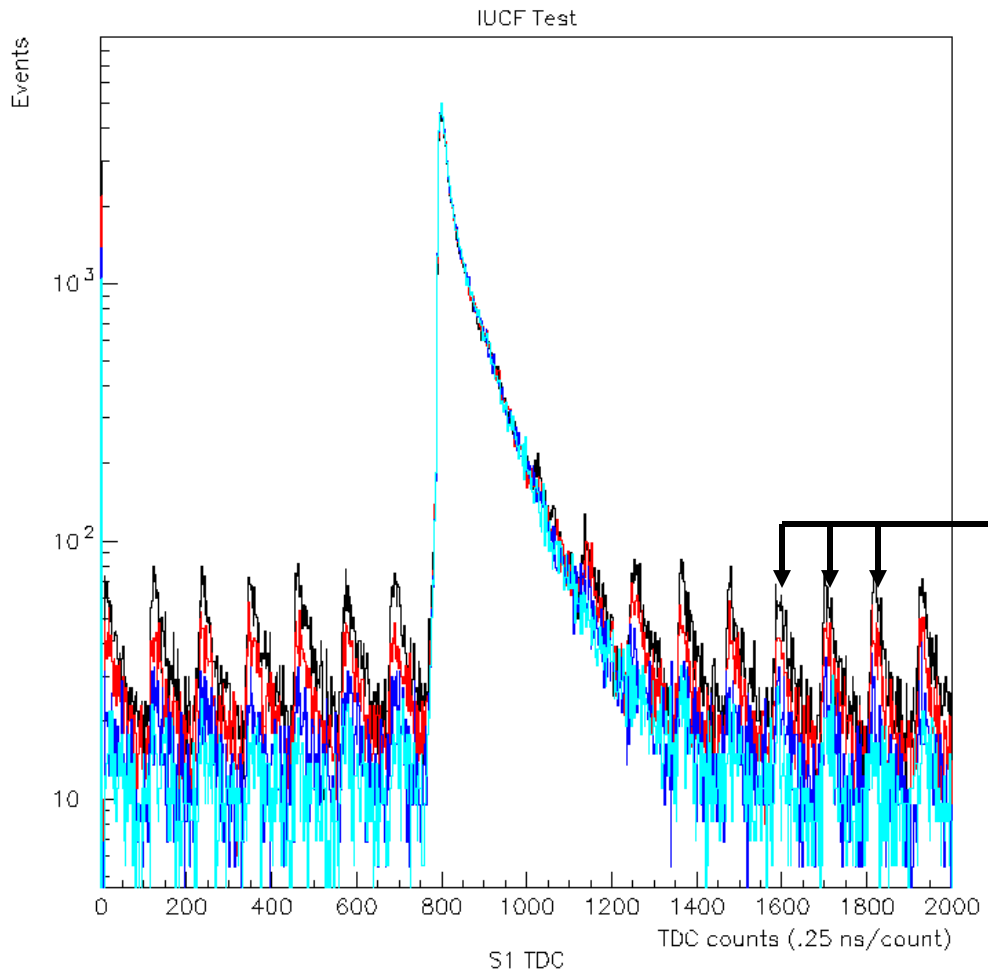
IUCF Tests of Cincinnati Scintillation Detector

July 18, 2003



Scintillation Light Time Distribution



Beam Rate

16 kHz

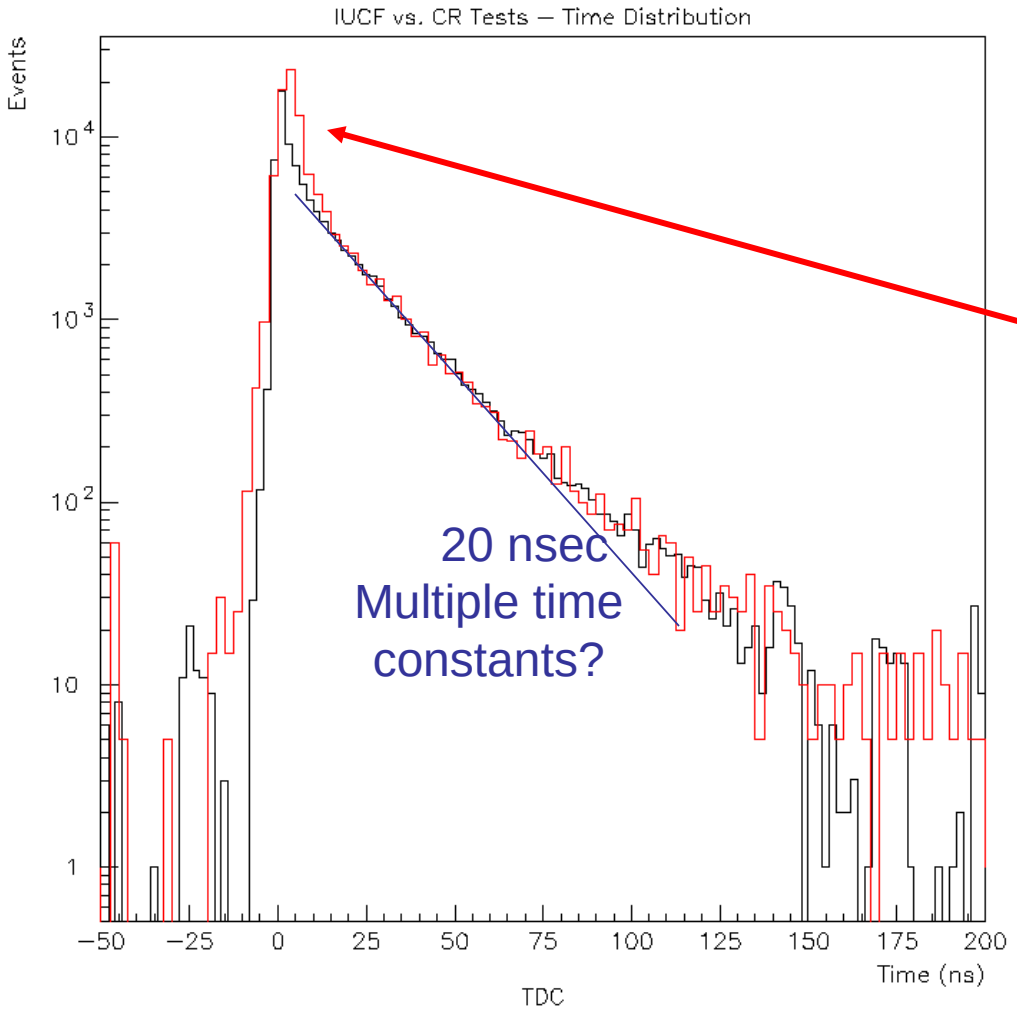
8 kHz

4 kHz

2 kHz

Accidentals in other RF buckets

IUCF vs. CR Time Distribution



IUCF

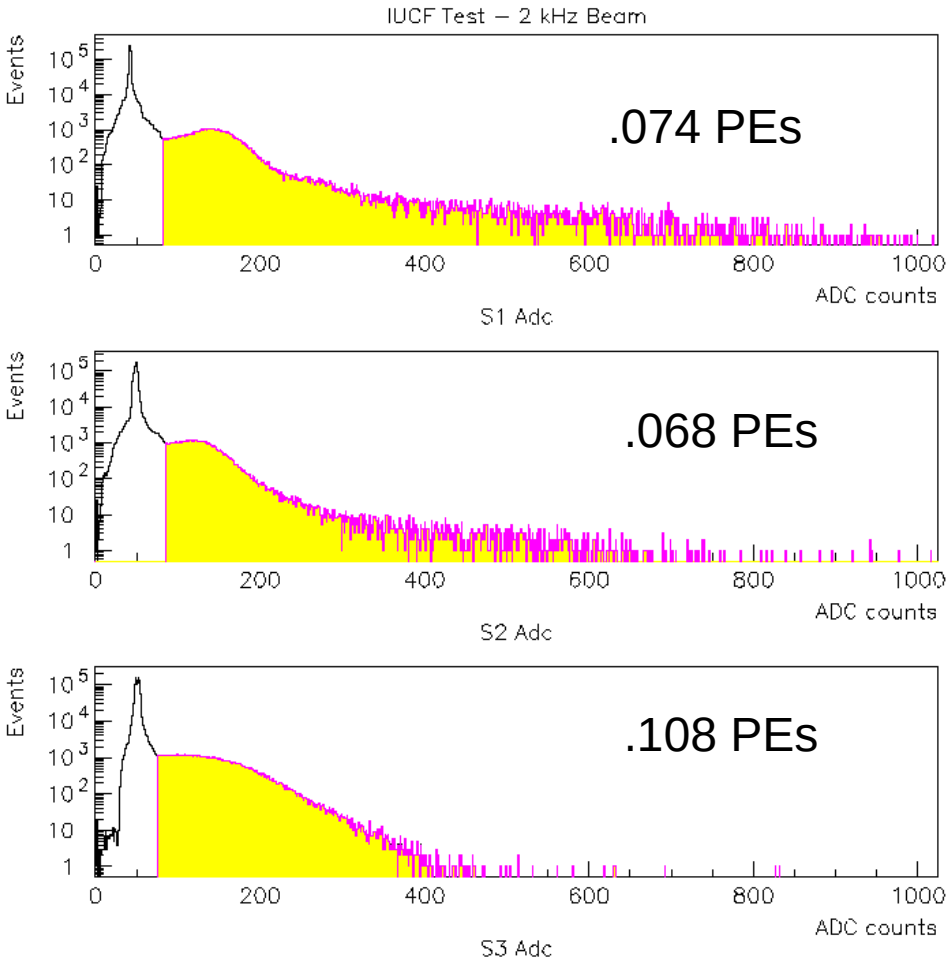
CR

Prompt scattered Čerenkov light???

Conclusion

Time distributions very similar between cosmic ray muons and low energy protons. **Scattered C-light has almost the same time distribution as scintillation light!**

Photoelectrons



IUCF Tests:

PEs/cm = 25

PEs/MeV 5

Cosmic Ray Tests

PEs/cm = 32

PEs/MeV 17

Additional from scattered C-light?

Mysteries

Cincinnati Scintillation Detector:

- Why do relativistic particles give so much more light? Scattering?

- Do we really have multiple time constants?

IU Apparatus

Marcol 7 measurements were internally inconsistent. Needs another look.

We are not at the end of the tunnel yet!